



U. S. Department of Energy

ENVIRONMENT, SAFETY AND HEALTH

ONSITE TECHNICAL ASSISTANCE

ACTIVITY SUMMARY

OCTOBER–DECEMBER 1995

ENHANCED WORK PLANNING

Richland Fernald Mound Idaho Oak Ridge Rocky Flats Pantex

RICHLAND

The final report for the first phase of the Enhanced Work Planning Demonstration Project conducted at the Hanford Site in fiscal year 1995 was completed, and preparations were made for the second phase of the project to be conducted in fiscal year 1996. Discussions took place between RL, WHC Industrial Hygiene Programs, Hanford Environmental Health Foundation (the medical contractor), WHC line organizations, EH Mentors, and other stakeholders to make preliminary plans for the next phase of enhanced work planning. RL assembled an advisory team consisting of representatives from RL, WHC Industrial Hygiene Programs, Hanford Environmental Health Foundation, and EH Onsite Technical Assistance. This team met on several occasions to develop preliminary plans for the second phase of the demonstration project. In addition, various facility-level discussions and networking activities were conducted to determine facility interests and ideas for the demonstration. The next phase of the demonstration project will address medical surveillance and follow-on of key work planning enhancements identified under the first phase, such as enhanced job hazard analysis and risk- and complexity-based approaches.

The Enhanced Work Planning Demonstration Project will be conducted at three facilities: PUREX, Tank Farms, and K Basins. At PUREX, the project will be coordinated with the work planning reengineering efforts already under way. At West Tank Farms, reengineering has just begun to organize and will begin in early 1996; the enhanced work planning effort will also be coordinated with that initiative. At East Tank Farms, a demonstration will be conducted for "pit work," where team concepts and integration of safety and health and radiological controls are essential for efficient and safe work planning. At K Basins, the enhanced work planning activity will be coordinated with ongoing work control restructuring initiatives. In addition, the medical surveillance component of the demonstration project will be tested at K Basins, refined as necessary, and then exported for demonstration at the other facilities.

EH Mentors prepared Technical Assistance Plans and RL and WHC management approved the overall Enhanced Work Planning Demonstration Project, as well as facility-specific demonstrations to be conducted at PUREX, Tank Farms, and K Basins. These plans provide the framework for the project. More detailed work plans will be developed by the core and facility teams when they meet in January 1996. In addition, the advisory team discussed a framework for conducting the medical surveillance component, and a preliminary draft was developed for the team's review and comment. Hanford Environmental Health Foundation and WHC Industrial Hygiene Programs initiated activities to develop employee hazard profiles and associated criteria that are to be tested as part of the demonstration.

K Basins and PUREX continued their work control and work planning restructuring/reengineering efforts, with support from EH Mentors. With support from EH Mentors, PUREX refined the job hazard analysis process that had been enhanced during the first phase of the project. The job hazard analysis format was finalized, and backup information to assist in the process was developed. Work began on automating this process. This assistance "jump-started" the hazard analysis reengineering effort. EH Mentors working with WHC Industrial Hygiene Programs and K Basins collaborated with facility staff to initiate the work control restructuring and to plan for integration with the facility initiative that is based on risk- and complexity-based approaches consistent with enhanced work planning concepts.

OHIO (FERNALD)

Enhanced work planning initiatives at Fernald continue to produce significant benefits at both Fernald and Mound and lead to expansion of project efforts. Building on site successes using the enhanced work planning process to improve productivity and efficiency while enhancing worker safety and health, EH Mentors continue to support enhanced work planning initiatives at Fernald and Mound.

Each Enhanced Work Planning Demonstration Project brings together a core team of multidisciplinary participants (including planners and representatives from labor, safety, industrial hygiene, radiological control, and medical programs) to identify inefficiencies, inconsistencies, and bottlenecks in the planning and conduct of work. Such problems have often been shown to be the root cause of worker injuries as well as a source of considerable waste of resources. As the core team identifies problems, the group collaborates to develop workable solutions with maximum buy-in from all parties. Overall, the mentors' role is to help the core team objectively evaluate existing processes and facilitate the demonstration by helping conduct meetings, develop enhancements, establish performance measures, record lessons learned, and document how the demonstration is conducted to ensure effective transfer of lessons learned.

DOE and FERMCO have committed to continue Phase 1 of the Enhanced Work Planning Demonstration Project at Fernald, which will allow support of FERMCO personnel so that recently adopted work control enhancements can be fine-tuned and exported to other organizational groups at the site. The Phase 1 continuation focuses on refining and implementing the newly issued "Maintenance Work Controls" procedure—a major work product developed under Phase 1 activities. More specific objectives of the Phase 1 continuation include efforts to—

- Enhance use of feedback systems by the core team to allow a broader understanding of how well work was planned compared to how the work was actually conducted, considering matters such as schedule, budget, delays, and safety and health exposure characterizations. One feedback system will involve enhancing the use of the computerized maintenance and materials system by FERMCO managers, supervisors, and employees to monitor performance and establish effective resource loading.
- Enhance how Work Coordination Center meetings are conducted so that work can be promptly identified, walked down by all necessary personnel, authorized, and assigned.
- Develop and implement a sitewide deficiency tag procedure to alert facility occupants and project supervisors about pending work requests and eliminate duplication.
- Incorporate enhanced work planning elements into “electronic signature” and “electronic work order” initiatives currently under way.
- Integrate approved and accepted enhancements into FERMCO’s system through, for example, applying for Temporary Change Notices for enhanced forms to be used, writing revised procedures and job descriptions, and establishing formal charters for Enhanced Work Planning Demonstration Project groups.
- Incorporate hazard assessments, exposure characterizations, and medical department involvement into the team planning process. Enhance reporting and recordkeeping activities performed by the safety, health, and medical groups so that compiled information can be more efficiently used to document risks and hazards on a “by-the-job” basis and among similarly exposed populations.
- Export enhancements (developed primarily for nonprojectized corrective maintenance activities) and/or the enhanced work planning process itself to other FERMCO organizational groups or projects such as Safe Shutdown, Advanced Waste Water Treatment, or Vitrification.
- Test the enhancements already initiated by the Fernald Enhanced Work Planning Demonstration Project to ensure their incorporation into the planning and conduct of work activities while the project continues. Enhancements being tested can then be refined, as appropriate. Merits of enhancements being tested will continue to be compared against performance criteria.

The Fernald Enhanced Work Planning Demonstration Project has proven very successful. In addition to improving communications and esprit de corps, the project has produced over \$1.9 million in savings as well as a 33 percent drop in the site’s backlog of 4,200 maintenance work orders. These successes were highlighted at a recent meeting where more than 80 contractor and DOE managers, supervisors, and workers gathered to recognize the enhancements developed during the first phase of the Enhanced Work Planning Demonstration Project. At the meeting, EH Mentors and other DOE Headquarters personnel recognized members of the core team who spearheaded the demonstration project.

The lessons learned during the first phase of the demonstration project are documented in an interim report published in November. The report traces the results of the project from formation of the core team through implementation of enhancements in planning selected example work activities.

The second phase of the Enhanced Work Planning Demonstration Project focuses primarily on enhancing linkages between the safety and health groups onsite and the work control process. Based on recent meetings held among the project principals, 14 possible objectives for Phase 2 of the Enhanced Work Planning Demonstration Project have been identified. These objectives can be grouped into three major, overlapping categories: planning, data integration, and communications. The project team will prioritize and focus on the following objectives:

- Review recent DOE innovations in defining “necessary and sufficient” standards and requirements and applying hazard-based/graded approaches; determine how these innovations apply to activities at the Fernald Site from a practical standpoint (e.g., improving understanding of concepts among safety and health groups and implementing specific strategies for selected work activities).
- Develop methods to link information such as exposure assessment plans, hazard characterization results, and the identity of similarly exposed workers involved in specific work tasks to individual work packages. The overall objective is to establish a more accurate, complete, and readily accessible record of (1) what types of tasks were involved in a project and the types of exposures potentially associated with each of these tasks, (2) the individuals who worked on the project and the tasks they were involved in, (3) the magnitude of exposures that could be expected for each worker and the actual documented exposure, (4) the durations of the workers’ exposures, and (5) the interpretation of the exposure. This information can serve as the basis for establishing a defensible record linking exposures (or lack of exposures) to specific tasks and to specific workers and can enhance the defensibility of curtailing exposure monitoring, focusing it where it is most needed, or removing individuals from medical surveillance.
- Enhance how the safety and health organizations (e.g., industrial hygiene, safety, radiological controls, and medical) receive and use information from FERMCO’s computerized work order system, the Work Coordination Center, and other planning and scheduling meetings to strengthen associated safety and health planning efforts.
- Develop model or template exposure assessment plans and reports for work activities that are routinely performed.
- Enhance guidance to safety and health groups on when they should participate in job planning walkdowns and how walkdowns should be conducted.
- Reevaluate the effectiveness of the Centralized Permitting Group to enhance performance and revise the work permit form, which consolidates all current permits and enables safety requirements to be defined on a single form. Planned revisions would permit entry of data on electronic media so that the form could be integrated with the computerized maintenance management system.

- Enhance how the medical group is informed of the need for their involvement in the selection of workers for particular tasks or the need to initiate special medical surveillance or tests.
- Enhance policies capturing and using exposure data from work activities involving subcontractor and transient workers.
- Enhance standardization of “pick lists” identifying types of work activities and exposures to hazards associated with the work activities. This may include ensuring that consistent nomenclature is ultimately established for entry of data into automated information management systems;
- Propose automated sort features to allow maintenance supervisors to have rosters that identify employees specially qualified for specific work activities. This would allow supervisors to ensure that workers have appropriate credentials, including medical surveillance tests and exposure records, so that lists of suitably qualified workers could be easily compiled.

Phase 2 activities will continue through the summer of 1996 as enhancements are developed, tested, and incorporated into the Fernald work control systems.

EH Mentors at the Fernald Site assisted the FERMCO core team Leader in preparing a briefing on the Enhanced Work Planning Demonstration Project for the Assistant Secretary for Environment, Safety and Health in December. FERMCO's core team Leader and a representative from labor along with FN's Director of Safety and Assessment presented the briefing about the Fernald Enhanced Work Planning Demonstration Project and its successes to date.

OHIO (MOUND)

Consistent with the Enhanced Work Planning Demonstration Project at Fernald, management in the DOE Miamisburg Area Office and at EG&G Mound approved a Technical Assistance Plan for conducting a 6-month Enhanced Work Planning Demonstration Project at the Mound Site. Initial support by EH Mentors at Fernald involved conceptually developing a revised work control system at Mound. Under the new Technical Assistance Plan, EH mentoring support will involve assisting the site in defining and implementing their conceptual work control system, with particular focus on the types of enhancements that have proven successful at Fernald and other sites. Key issues being addressed include applying a graded, hazard-based approach to define the level of rigor necessary for planning various routine and nonroutine jobs at the site, using enhanced priority systems, and defining how a number of previously established work review committees can be integrated into the process to maximize productivity, efficiency, and worker safety.

Finally, to aid in the coordination of enhanced work planning initiatives taking place across the DOE complex and to ensure that enhancements and work products from enhanced work planning initiatives can be given full consideration by other sites, EH Mentors are preparing a guidance manual for launching enhanced work planning programs. The manuals will include information such as recommended topics to explore during multidisciplinary core team

meetings, proven approaches to gathering baseline information for identifying enhancements, the types of enhancements identified during enhanced work planning projects to date, and a list of enhanced work planning technical experts and information resources available to the site. A first draft of the guidance manual is scheduled for completion by mid-January 1996.

IDAHO

In November, the EH Technical Assistance Team briefed the new DOE Idaho Operations Office (ID) Deputy Manager—and subsequently, a group of potential enhanced work planning participants, management and staff from ID and Lockheed-Martin Idaho Technologies (LMIT)—on the Enhanced Work Planning Demonstration Project. The EH team described the initiative and reported on the status of projects at other participating sites. The ID point of contact described preliminary ideas for enhancements to the work planning process that could be demonstrated at the Idaho National Engineering Laboratory (INEL).

The presentation was well received, and by December, EH Mentors drafted technical assistance plans, and ID and LMIT managers approved the overall site plan. The EH Mentor onsite is drafting more specific plans for four potential areas to demonstrate enhanced work planning concepts. Primary emphasis is on (1) the Idaho Chemical Processing Plant, where EH Mentors will work with five core teams and a process improvement team that will oversee the other five teams to improve the efficiency and effectiveness of work planning and (2) the sitewide Integrated Product Team, which coordinates work planning among 14 work control centers across the site. EH Mentors will also assist the Integrated Product Team in developing sitewide work control procedures to promote uniformity. Secondary emphasis is being given to sitewide asbestos control and medical recordkeeping. EH mentors will assist the asbestos abatement program in developing procedures for surveillance, recordkeeping, and other aspects of the program as they are identified. EH Mentors will also work with INEL's occupational health physician to develop an improved data base for medical surveillance and worker exposures.

OAK RIDGE

EH Mentors participated in a kickoff meeting for the Enhanced Work Planning Demonstration Project at Oak Ridge in October. The project will be completed within the K-25 Waste Management Division. Core team members and Assistance Team members have been selected, and a Technical Assistance Plan has been developed for the demonstration project.

Participants within the K-25 Waste Management Division have proceeded enthusiastically in completing the initial activities of the Enhanced Work Planning Demonstration Project. The core team selected potential enhancements for trial implementation and identified performance measures to determine program success. Potential enhancements include—

- ensuring participation of employees from various levels and disciplines in the work planning process;
- improving communication and sharing hazard information and monitoring data between Industrial Hygiene and the workers and supervisors, between Industrial

Hygiene and the Medical Department, and between the Medical Department and workers;

- enhancing planning, scheduling, and coordination processes to minimize the need for field changes and to reduce or eliminate project delays;
- improving the involvement of the work requester in the planning process;
- reducing or streamlining permits, forms, and documents that must be prepared for work packages; and
- improving tracking of project work hours.

The core team has selected two projects to pilot the Enhanced Work Planning Demonstration Project: K-1420—A Storage Tank Sludge Removal and K-1202 Storage Tank Valve Replacement. Improvements in work planning are currently being implemented for these two projects.

The EH Mentor for the K-25 Waste Management Division Enhanced Work Planning Demonstration Project visited the Fernald and Hanford Sites during this reporting period to become familiar with lessons learned from Enhanced Work Planning Demonstration Projects at these sites and to identify potential improvements that can be transferred to the Oak Ridge site. Examples of potential improvements include—

- Review the Hanford qualitative job hazard analysis and compare it to what is currently used at K-25. If any of the aspects of the job hazard analysis used at Hanford provide possible improvements, an enhanced job hazard analysis may be developed for possible demonstration testing at K-25.
- Provide hazards awareness training to project planners.
- Create a core team subcommittee to identify enhancement areas relating to medical surveillance.
- Provide a breakdown of work categories to use as a basis for determining level of integrated team planning required for the project.
- Implement the computerized Planning Checklist developed at Hanford with appropriate revisions applicable to the needs of the K-25 Waste Management Division.

The EH Mentor reviewed these initiatives with key members of the K-25 Waste Management Division core team, including Industrial Hygiene, Industrial Safety, and Planning personnel. The core team expressed particular interest in the computerized planning checklist that is being developed at Hanford. Integrating this checklist, with applicable revisions, into the K-25 Waste Management Division planning process will be further explored during the next reporting period. Successful integration and implementation of a computerized planning checklist within the K-25 Waste Management Division would have a high potential for further

development and use within other DOE Oak Ridge facilities, validating the significant benefits from the Enhanced Work Planning Demonstration Projects

ROCKY FLATS

During October and November, the Office of Field Support worked closely with the Rocky Flats Field Office to develop a plan for the continuation of the Enhanced Work Planning Demonstration Project started at Rocky Flats Environmental Technology Site in early 1995. As a result of discussions with RF, EH developed a draft technical assistance plan for supporting RF in phase 2 of the Enhanced Work Planning Demonstration Project. A Safety Systems Process Development and Improvement Team was established, consisting of representatives from RF, Kaiser-Hill, and the Steelworkers Union, to address integrating health and safety as a part of doing work at Rocky Flats.

RF, Kaiser-Hill, and the Steelworkers Union developed two key themes during the Process Development and Improvement Team meetings: Safety is an integral part of work, and worker involvement is essential in work planning.

The team identified the following elements that should be addressed in the second phase of the demonstration project and presented them to Kaiser-Hill management with a recommendation to form teams to develop and implement work plans to address them: (1) vision and guiding principles, (2) roles and responsibilities, (3) work planning and procedures, (4) changing the structure to make it happen, (5) refining the process, (6) communications, (7) training, and (8) worker participation and ownership. Kaiser-Hill management will select the process improvement teams that will be established to address these elements.

Once the team presented its recommendations, Kaiser-Hill directed its senior managers to provide responses to the identified issues, emphasizing near-term changes. Kaiser-Hill specifically requested support and a proposal from the Steelworkers Union on how to involve workers in the process improvement teams. EH and RF were requested to provide input on DOE issues to promote success of the team's efforts. Key successes achieved during the reporting period include—

- obtaining endorsement of Phase 2 of the Enhanced Work Planning Demonstration Project;
- obtaining Kaiser-Hill senior management support for using enhanced work planning concepts as a way of defining an approach to integration of safety with how work is conducted;
- obtaining tentative verbal agreement among EH, RF, and Kaiser-Hill on the draft Enhanced Work Planning Technical Assistance Plan;
- establishing the Process Development and Improvement Team to focus on integrating safety into conduct of work; and
- identifying as a key theme that worker involvement is essential in work planning and conduct.

EH Mentors will continue working with the process improvement teams, as appropriate, to assist in resolving the identified issues.

PANTEX

During October and November, EH Mentors met with the DOE Amarillo Area Office and the Pantex Plant management and operating contractor to discuss a potential Enhanced Work Planning Demonstration Project. As a result of these meetings, the following scopes of work for the Pantex Enhanced Work Planning Demonstration Project were established: (1) form the Enhanced Work Planning Team, (2) determine the scope and plan the details of the Enhanced Work Planning Demonstration Project, (3) develop performance objectives for the project, (4) conduct the demonstration, and (5) evaluate and report the results. The objective is to design the effort around other improvement initiatives already under way. Pantex will focus on developing work planning and hazard analysis approaches that are consistent with enhanced work planning concepts during the conduct of the project. A critical part of the enhanced work planning process is to ensure consistent and coherent input from medical programs at the beginning of the work planning process, demonstrating the integration of industrial hygiene and medical professionals with Pantex workers and line management.

General aspects of the Enhanced Work Planning Demonstration Project at Pantex include the effort to—

- Implement site work planning and hazard analysis approaches that are consistent with enhanced work planning concepts.
- Demonstrate the Pantex occupational health program, which includes industrial hygiene and medical surveillance initiatives.
- Analyze existing line management and medical organization interactions during the hiring process, and select potential enhancements for demonstration.

The Enhanced Work Planning Demonstration Project will entail the following activities:

- Baseline the existing Pantex OSHA occupational health program.
- Review the Pantex HealthNet software package, and develop enhancements to improve communications among the medical professionals.
- Identify programs or processes that help with the integration of safety and health information in a format that can be used by line management and employees.